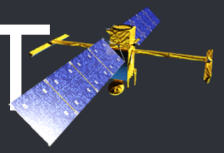
podaac
Physical Oceanography Distributed Active Archive Center

PO.DAAC SWOT Hydrology Data Access



Michael Gangl, Michelle Gierach, Jessica Hausman, Catalina Oaida, Suresh Vannan

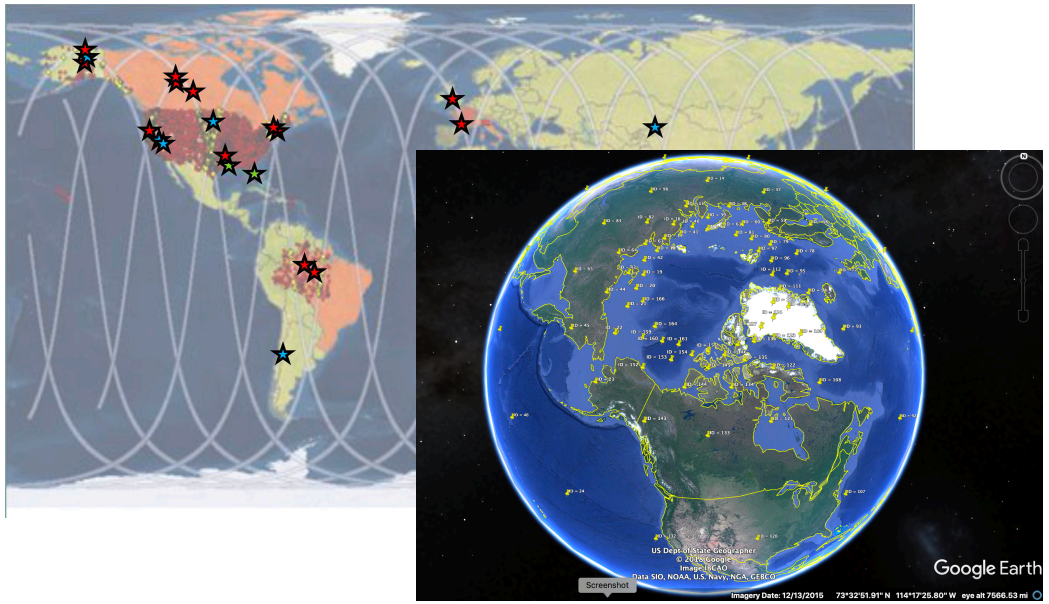
Contact: michael.e.gangl@jpl.nasa.gov

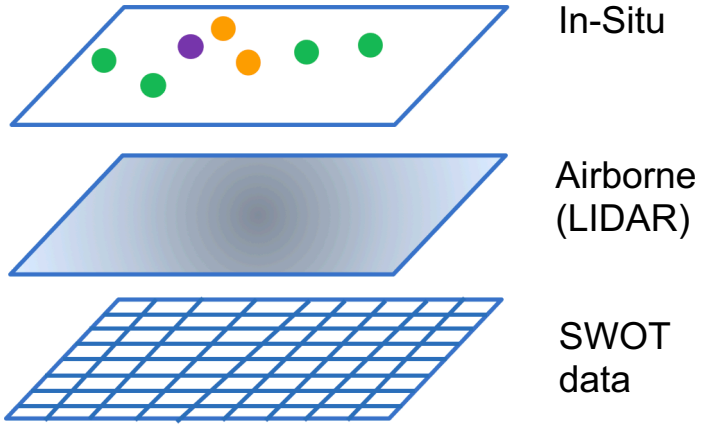
June 19th, 2019
SWOT Science Team Meeting 2019
Bordeaux, France

Caltech

Hydrology Cal/Val Support

Tier -1 Sites





Provide subsetting capabilities across the Cal/Val Insitu and Cross over sites

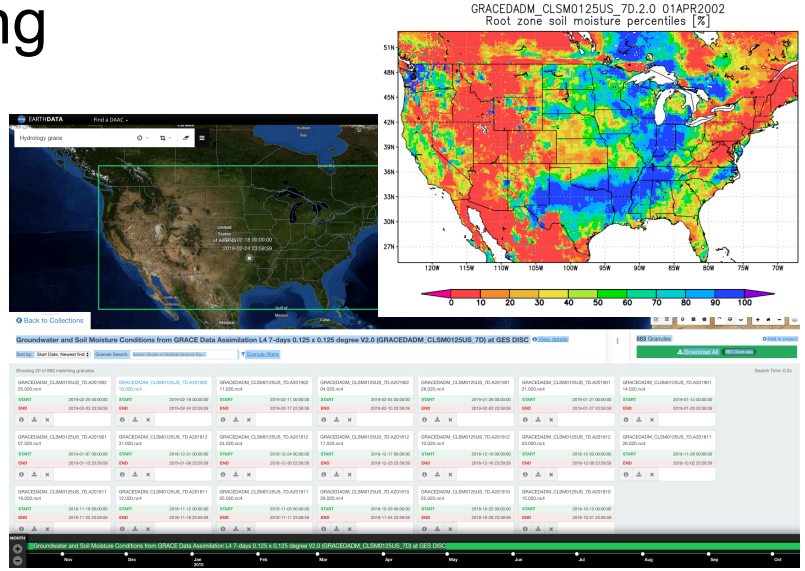
- ✓ Archive and distribution of Cal/Val datasets
- ✓ Data Engineering support for effective integration of Cal/Val data in support of SWOT
- ✓ SWOT Cal/Val datasets (funded by NASA PO program) will be made searchable and available at PO.DAAC
- ✓ Support data access across Hydrology and Ocean Cal/Val Sites (Example Hydrology: Tier 1 Gold Standard and Tier 2 Sites; Ocean: California Site)
- ✓ Simplified Cal/Val dataset submission into PO.DAAC
- ✓ Access to pre-SWOT datasets

Tools – Existing Search and Subsetting

Earthdata Search

- PO.DAAC And EOSDIS Holdings
  - SWOT will use similar mechanism
- GUI and Programmatic Access

https://search.earthdata.nasa.gov



Resources

YouTube Tutorials
https://bit.ly/2WmyNso

Datasets

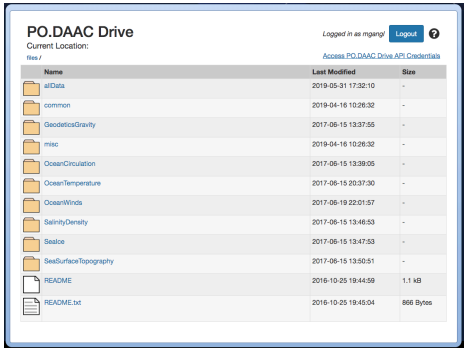
MEaSUREs Integrated Multi-Mission Ocean Altimeter Data for Climate Research
- Swath Sea Surface Height Anomaly
- Gridded Sea Surface Height Anomaly

MEaSUREs Pre-SWOT Hydrology Virtual river station heights
- Lake/reservoir surface water area extent
- Lake/reservoir water height

GRACE and GRACE-FO

Upcoming

Jason-CS/Sentinel-6 – November 2020
Simulated data from the SWOT project



https://podaac-tools.jpl.nasa.gov/drive

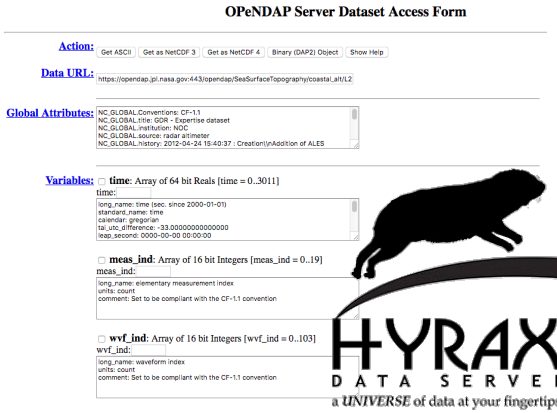
PO.DAAC Drive

- No FTP available
- HTTPS Based product browsing
- Download files to your computer
- GUI and API access

OPeNDAP

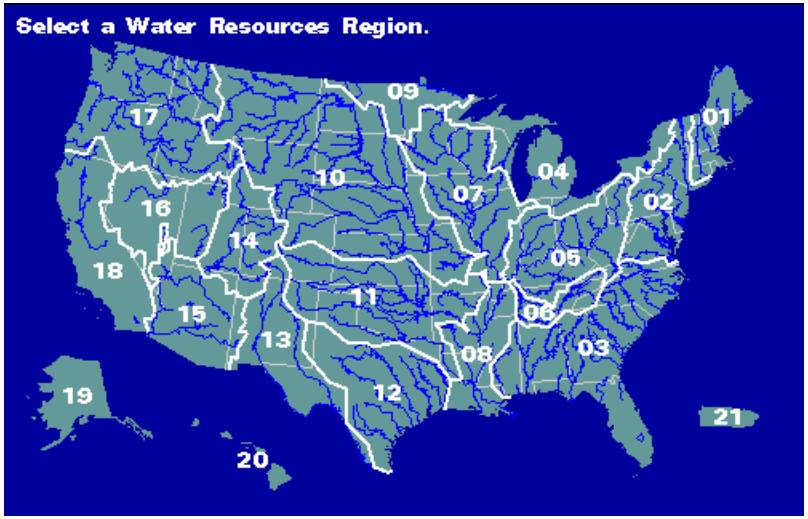
Time, Space, and Variable subsetting
- "GUI" and Programmatic access

https://opendap.jpl.nasa.gov/opendap/



Tools Preview – Search and Discovery Webservices

Regional Search – HUC and SWOT Feature IDs



Subscribe to any search parameters available:

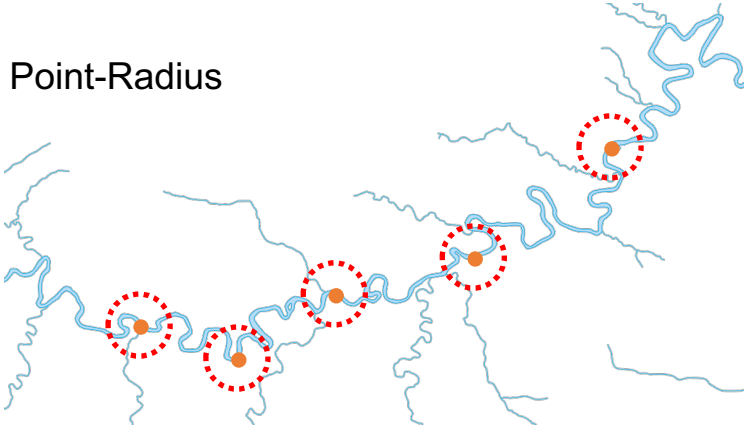
- Feature ID or HUC
- Points, Lines, & Geometries
- User supplied shapefiles

SUBSCRIBE

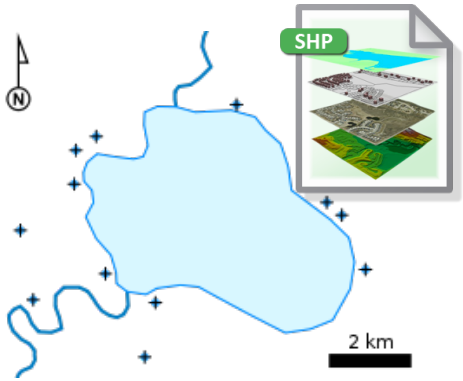
Digest or per-granule (search hit) notifications

Combine with transformations

Point-Radius



Custom Shapefile Search



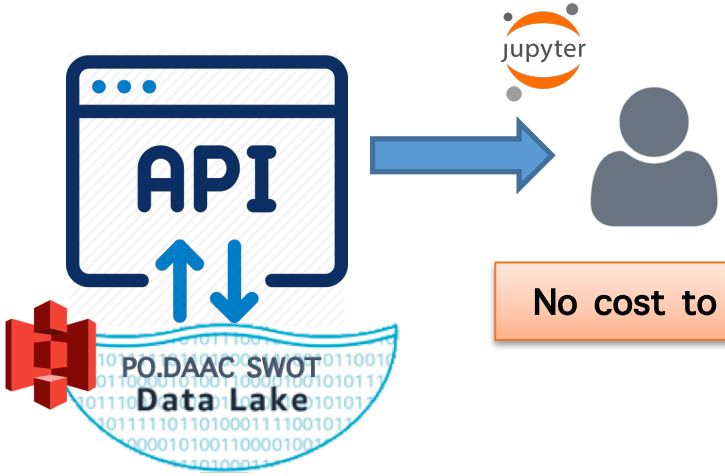
Tools Preview – Webservices

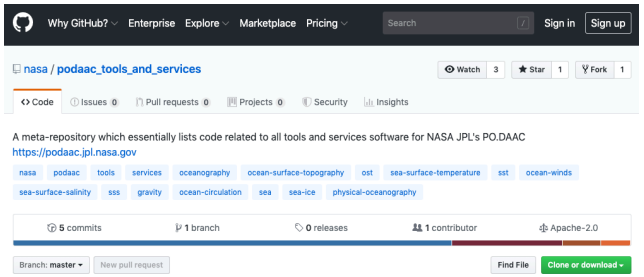
Scripted Access

PO.DAAC

Webservices 2.0

OPEN {API} INITIATIVE



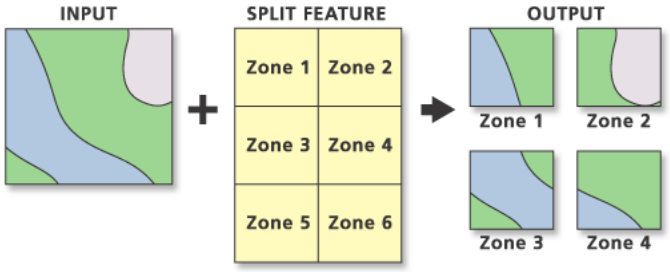


No cost to end-user

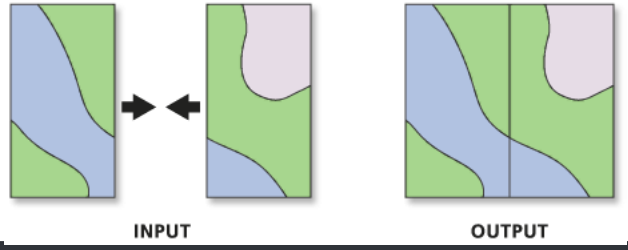
Github and Github forum for community adoption

Data Transformation

Split Hydrologic Features

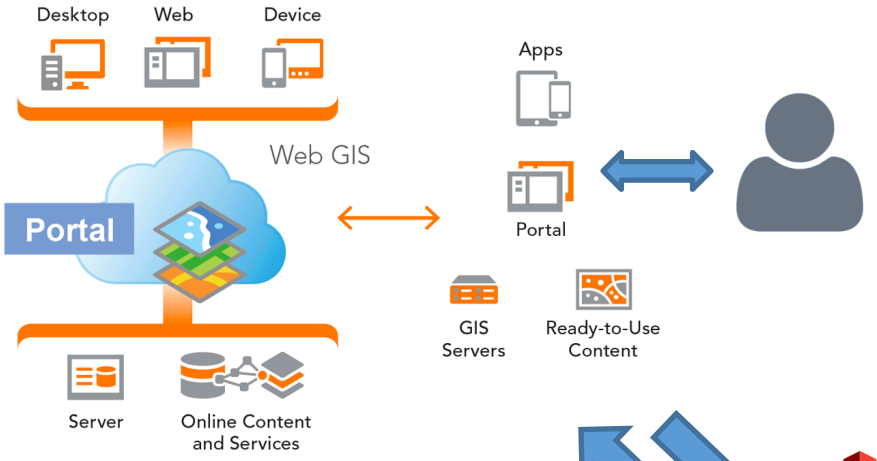


Merge Hydrologic Features (Space and Time)

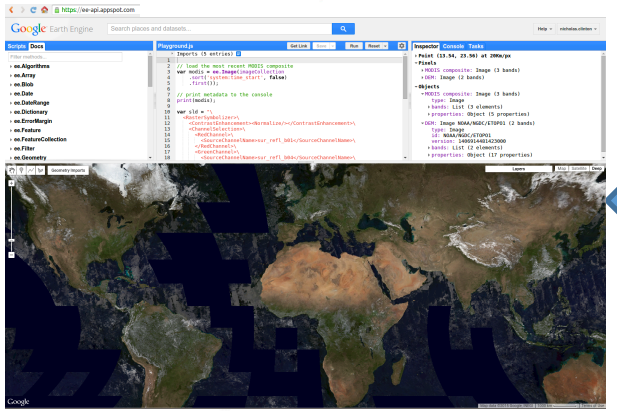


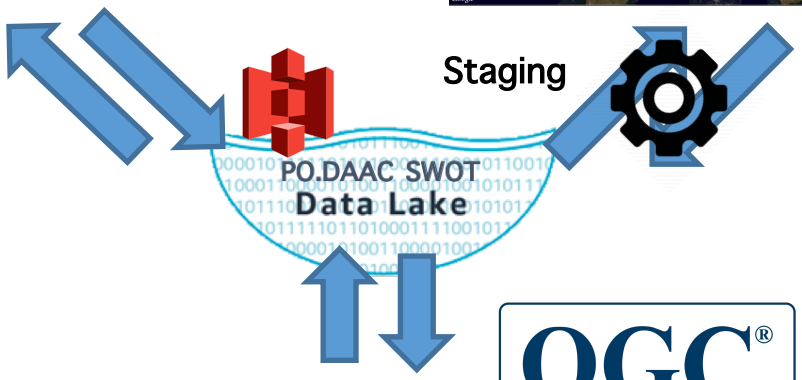
Tools Preview – End User Analytics Tools

ArcGIS Portal



Google Earth Engine





No cost to end-user

No cost to end-user

No cost to end-user

OGC®
Making location count.

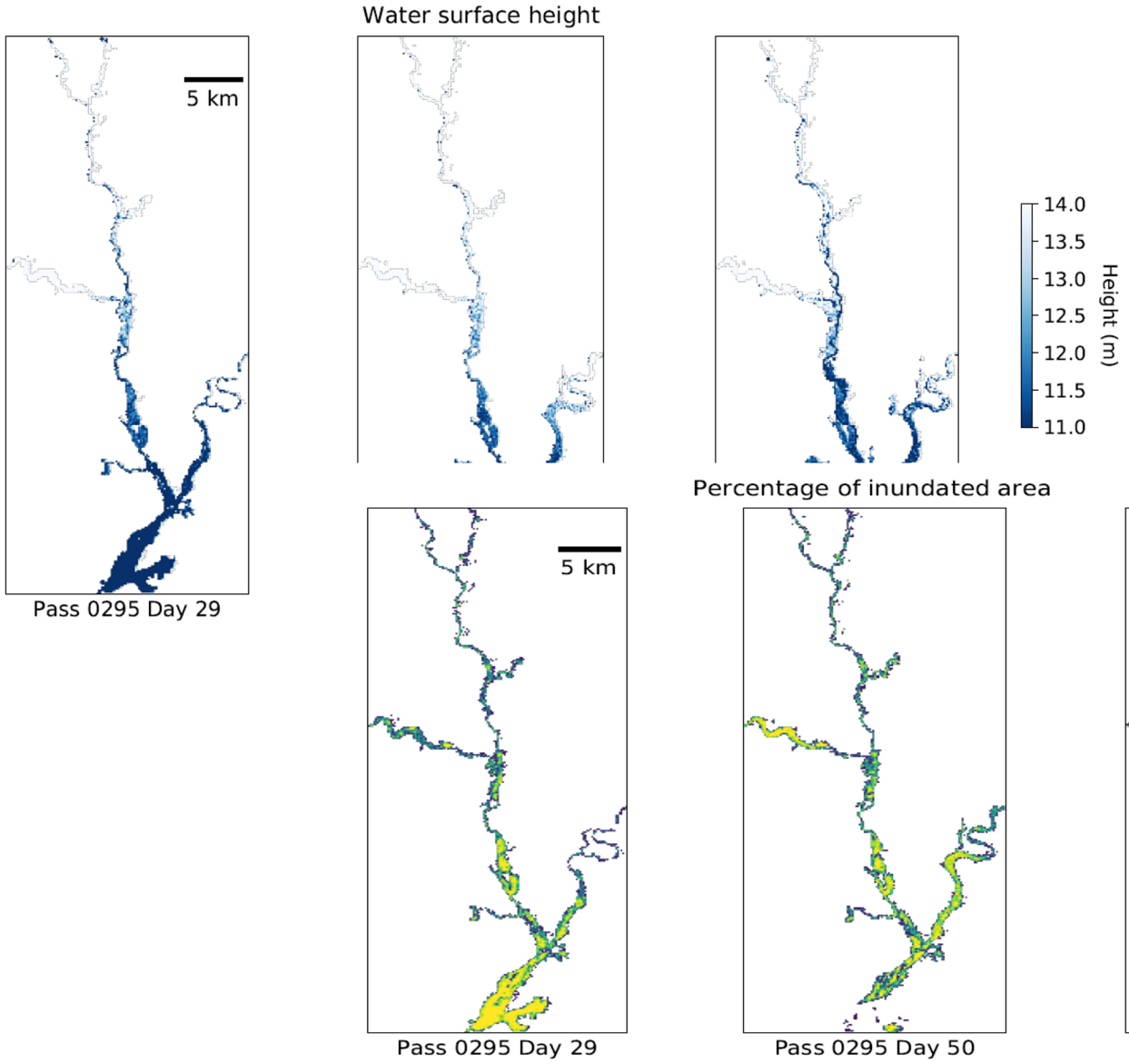
W F/C/M S

Format Standards

TimeSeriesML

Geopackage

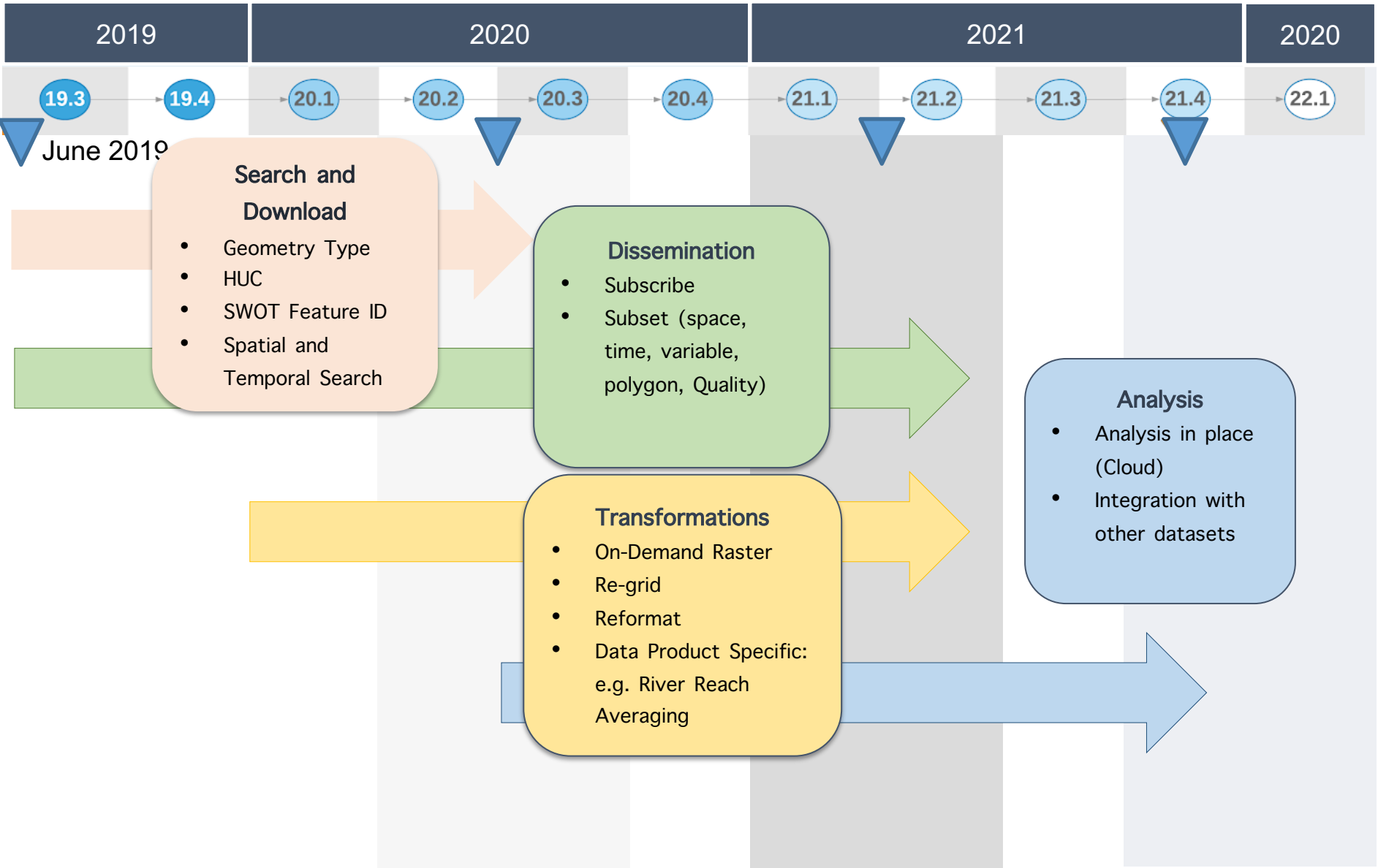
Tools Preview – On Demand Raster



On-demand production:

- Not archived.
- Limited coverage (<< global).
- User-specified coverage
- User-specified resolution

PO.DAAC SWOT Capability Timeline



Data Lake Inundation Timeline